

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings of claims in the application:

Listing of Claims:

Claims 1-10 (Canceled)

Claim 11 (Currently Amended) An isolated polypeptide monomer comprising an alpha subunit of a heteromeric potassium channel, the polypeptide monomer:

(i) having the ability to form, with at least one additional Kv alpha subunit, a heteromeric potassium channel having the characteristic of voltage gating;

(ii) having ~~a monomer subunit association region~~ an amino acid sequence that has greater than 70% amino acid sequence identity to ~~a Kv6.2 subunit association region~~ SEQ ID NO: 1 or SEQ ID NO:17; and

(iv) specifically binding to polyclonal antibodies generated against SEQ ID NO:1 or-SEQ ID NO:17.

Claim 12 (Cancelled)

Claim 13 (Cancelled)

Claim 14 (Original) The isolated polypeptide monomer of claim 11, wherein the polypeptide monomer has an amino acid sequence of SEQ ID NO:1 or SEQ ID NO:17.

Claim 15 (Currently Amended) An isolated polypeptide monomer comprising an alpha subunit of a heteromeric potassium channel, the polypeptide monomer:

(i) having the ability to form, with at least one additional Kv alpha subunit, a heteromeric potassium channel having the characteristic of voltage gating;

(ii) ~~having an S4-S6 region that has greater than 85% amino acid sequence identity to a Kv6.2 S4-S6 region; and~~
~~—— (iii) specifically binding to polyclonal antibodies generated against SEQ ID NO:1 or SEQ ID NO:17~~ having greater than 90% amino acid sequence identity to SEQ ID NO:1 or SEQ ID NO:17.

Claims 16-35 (Canceled)

Claim 36 (New) An isolated polypeptide monomer comprising an alpha subunit of a heteromeric potassium channel, said polypeptide monomer encoded by a nucleic acid specifically hybridizing under stringent conditions to SEQ ID NO:18, wherein the stringent conditions comprise incubation at 42° C in a solution comprising 50% formamide, 5x SSC, and 1% SDS or incubation at 65° C in a solution comprising 5x SSC and 1% SDS and a wash at 65° C in a solution comprising 0.2x SSC and 0.1% SDS, wherein the polypeptide monomer comprises an alpha subunit that has the ability to form, with at least one additional Kv alpha subunit, a heteromeric potassium channel having the characteristic of voltage gating.